



Designation: D2961 – 02 (Reapproved 2007)

Standard Test Method for Single-Stage Total Moisture Less than 15 % in Coal Reduced to 2.36-mm (No. 8 Sieve) Topsize¹

This standard is issued under the fixed designation D2961; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers a single-stage procedure for the determination of total moisture less than 15 % in coal reduced to 2.36- mm (No. 8 sieve) topsize. This test method is for determination of total moisture only. Materials subjected to this test shall not be used in the determination of other test parameters. It is recognized that the conditions of the test can increase the potential for significant oxidation effects on some coals. If the oxidation potential is of concern, the use of this single-stage method shall involve prior agreement between the parties involved. This test method shall not be construed as the referee standard test method for total moisture. For referee purposes, users of this test method are referred to Test Method D3302 for moisture determination methods which are not as susceptible to oxidation effects.

1.2 Statistical analysis of data from several sources indicates that at a 95% confidence level, there is statistically no significant difference between the mean value of the results obtained by D2961 and D3302 (that is, no bias is detected between the two methods at the 95% confidence level) for moisture levels between 1.4% and 15.8%. These two test methods were not compared in this study for some ranks of coal including lignite and anthracite. (See 9.2.)

1.3 The values stated in SI units are to be regarded as the standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D2013 Practice for Preparing Coal Samples for Analysis

¹ This test method is under the jurisdiction of ASTM Committee D05 on Coal and Coke and is the direct responsibility of Subcommittee D05.21 on Methods of Analysis.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

D3302 Test Method for Total Moisture in Coal

3. Summary of Test Method

3.1 Moisture is determined by establishing the weight loss of the coal sample by drying in an oven with forced-air circulation.

4. Significance and Use

4.1 The measurement of total moisture is required to determine whether coal meets commercial or environmental specifications, or both. Within the limitations prescribed in the scope, this test method describes a procedure for determination of total moisture that requires less time than the procedures described in Test Method D3302.

5. Apparatus

5.1 *Drying Pans*, noncorrodible, stable at the temperature used, and of such size that the sample can be spread to a depth of not more than 25 mm (1 in.).

5.1.1 The pan size may be varied to suit the size of the sample and the oven. The height of the sides shall be no more than 40 mm (1½ in.) so that air is not restricted in passing over the coal.

5.2 *Drying Oven*, forced air-type capable of maintaining a temperature of 107 ± 3°C and constructed to provide for a continuous air flow to all parts of the oven.

6. Sampling

6.1 The sample shall be prepared according to Test Method D2013 except that the 500 g portion can be further subdivided to 125 g.

6.2 That portion of the sample used for the moisture determination shall have a minimum weight of 125 g.

7. Procedure

7.1 Weigh the empty drying pan. Record the mass in grams as W_1 . Transfer the sample from the sample container to the drying pan. Distribute the sample uniformly over the pan. Do not exceed a depth of 25 mm (1 in.). Place the empty sample container in the drying pan. Weigh the drying pan, coal sample, and empty sample container. Record the mass in grams as W_3 .